

REMARKS

Claims 11, 20, and 22 have been amended without prejudice or disclaimer to remove the phrase, “substantially soluble in water”. Also, step e) of claims 11, 20, and 22 has been amended, merely for purposes of clarification, to indicate that the term “salt” is referring to a C₁₂₋₂₂ fatty acid salt. No new matter has been added into the claims.

Interview Summary

Applicants appreciate the opportunity to meet and discuss this case with Examiner Nutter on October 2, 2007. Examiner Nutter reviewed the content of the references with R. James Balls and indicated that, in accordance with the following comments, the rejections had been overcome.

Oath or Declaration

The Office Action states that an oath or declaration has not been filed in the prosecution of this application. However, in accordance with 37 CFR 1.63(d), a copy of the original oath filed in application serial no. 09/857,611, from which this application is a continuing application, was filed in this case on March 22, 2004 and appears in Public Pair. Both a photocopy of the declaration appearing in Public Pair and a photocopy of the original declaration is submitted herewith for the examiner’s review.

Response to Rejection under 35 U.S.C. §112, First Paragraph

Claims 11-12, 14-15, 20 and 22-24 have been rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement. The Office Action concludes that amending the claims to designate that the polymers are “substantially soluble in water” is new matter not supported by the specification as originally filed. Without acceding to the rejection and to further prosecution, the phrase has been removed. Therefore, the rejection should be withdrawn.

Response to Rejection under 35 U.S.C. §103(a)

Claims 11-12, 14-15, 20 and 22-24 have been rejected under 35 U.S.C. §103(a) as being obvious over Silbiger (U.S. Patent no. 6,284,838) in view of Buehler et al. (U.S. Patent No. 5,316,578) and Frische et al. (U.S. Patent No. 5,374,304). The rejection concludes that these three references taken together render the claimed subject matter obvious.

The rejection is improper because:

1. The references (individually or in combination) do not provide every element of the claimed subject matter; and
2. The references teach away from what applicants have claimed.

Silbiger is drawn to biodegradable compositions obtained from the combination of lignin and protein and describes the use of starch as one of twelve optional fillers. The maximum amount of fillers suggested by Silbiger is 50%, but preferably the amount of fillers is between 5-15%. *See* column 6, lines 45-48. Furthermore, Silbiger exemplifies numerous examples but none of them use starch as a filler. *See* Examples 1-8 and Table 1 and 2.

The instant claims are drawn to biodegradable polymers “consisting essentially of” what amounts to be a major component of starch. Silbinger, on the other hand, is directed to compositions containing a majority of lignin and protein, which is substantially excluded by the transition phrase, “consisting essentially of”, in the instant claims. With respect to starch, Silbinger describes starch as one of many optional fillers and provides a maximum amount of fillers at 50%, but a preferred amount at 5-15%. An amount of starch envisioned by the instant claims can be calculated by removing from 100% the maximum amounts of allowable water soluble polymer (11%), added water (12%), polyol plasticizer (12%) and fatty acid (1.5%) leaving about 63.5%, outside the range of even the broadest disclosure of Silbinger. Finally, even though Silbinger discloses starch as a possible filler, none of its examples include starch. When the prior art reference teaches or suggests preferred embodiments different from the claimed embodiments, such teaching weighs against selecting the claimed embodiments and thus

against a determination of obviousness. *In re Baird*, 16 F.3d 380, 382-83, (Fed. Cir. 1994); MPEP 2144.08(II)(A)(4).

Buehler et al. is directed to producing thermoplastic melts using special chemically modified starches. Buehler et al. does not disclose or suggest including polyvinylacetate or polyvinyl alcohol in its compositions and Buehler et al. discourages the use of natural starch or hydroxyalkyl modified starch. Where the teachings of a reference discourage persons skilled in the art from doing what applicants claim, the reference established “the very antithesis of obviousness.” *In re Buehler* 185 USPQ 781 (CCPA 1975); *In re Rosenberger and Brandt*, 156 USPQ 24, 26 (CCPA 1967. The specification of Buehler et al. explains that its chemically modified starches are derived by reacting the OH groups on starch with urea, alkylene oxides, and/or other ether, ester, urethane, carbamate or isocyanate-forming substances.” See Column 1, first paragraph. Natural starches are not appropriate for use in the process of Buehler since they must be destructure (chemically modified) before they can be thermoplastically processed. See Column 1, lines 29-31. Comparison Example 1 also reinforces the assertion that natural starch is not appropriate for thermoplastic melts, reporting that “the extruded starch strand [using native potato starch] breaks when bent due to embrittlement.” With respect to hydroxyalkyl modified starches, Comparison example 11 suggests that hydroxyalkyl modified starch is also not appropriate for thermoplastic melts. A melt produced using high amylase hydroxypropyl corn starch produced a “very thin liquid melt” which was “tacky and did not solidify after cooling.” Thus, not only does Buehler et al. fail to provide polyvinylacetate or polyvinyl alcohol in its compositions, it teaches away from using natural starch and hydroxyalkyl C₂₋₆ modified starch, as set forth by the instant claims.

Frische et al. is directed to using special high amylose starches in biodegradable plastics. Frische et al., however, does not disclose or suggest using a fatty acid or fatty acid salt, and Frische et al. also teaches away from using natural starch or hydroxyalkyl modified starches. Where the teachings of a reference discourage persons skilled in the art from doing what applicants claim, the reference established “the very antithesis of obviousness.” *In re Buehler* 185 USPQ 781 (CCPA 1975); *In re Rosenberger and Brandt*, 156 USPQ 24, 26 (CCPA 1967.

With respect to natural starch, the specification explains the disadvantages of natural starch—it produces brittle films with low elasticity. It goes on to explain that the films of natural starch have insufficient transparency, rough surfaces, and require sophisticated processes and equipment for manufacture. *See* Column 1, lines 35-44. With respect to hydroxyalkyl modified starches, the specification explains that even these chemically modified starches are not “regarded as ideal” due to their poor film properties, their difficulty in handling, and limited transparency. *See* Column 1, lines 54-65. To overcome the supposed negative properties of natural starch and hydroxyalkyl modified starches, Frische et al. uses a special amylase starch resulting from a method of treating the starch with formamide. *See* Column 3, lines 23-26.

The references in combination fail to describe the components of instant claims—starch—and instead teach away from using natural and hydroxyalkylated starches together, and in the amounts set forth in the instant claims. Thus, the rejection is improper and should be withdrawn.

In view of the above, applicants believe the claims are in condition for allowance.

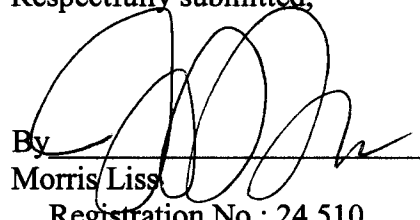
In the event the Examiner has any outstanding questions or concerns, the undersigned is available at the telephone number noted below.

The Office is authorized to charge any necessary fees to Deposit Account No. 22-0185.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 22-0185, under Order No. 21444-00009-US2 from which the undersigned is authorized to draw.

Dated: October 3, 2007

Respectfully submitted,

By 
Morris Liss

Registration No.: 24,510

R. James Balls

Registration No.: 57,703

CONNOLLY BOVE LODGE & HUTZ LLP

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Attorneys for Applicant

DECLARATION FOR PATENT APPLICATION

As a below-named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

the specification of which: Biodegradable Polymer (check one)

☐ is attached hereto.

☐ was filed on 13 December 1999 as United States Patent Application Serial No. or PCT International Application Number PCT/AU99/01101 and was amended on _____ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the patentability of this application in accordance with 37 CFR § 1.56(a).

Prior Foreign Application(s): I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate listed below, or § 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

PP 7696	AUSTRALIA	14/12/98	Priority Claimed
PP 7697 (Application No.)	AUSTRALIA (Country)	14/12/98 (Day/Month/Year Filed)	<input type="checkbox"/> <input type="checkbox"/>
PP 7702 (Application No.)	AUSTRALIA (Country)	14/12/98 (Day/Month/Year Filed)	Yes No
PQ 1847 (Application No.)	AUSTRALIA (Country)	27/07/99 (Day/Month/Year Filed)	<input type="checkbox"/> <input type="checkbox"/>
			Yes No
			<input type="checkbox"/> <input type="checkbox"/>
			Yes No

I hereby claim the benefit under Title 35, United States Code § 119(e) of any United States provisional application(s) listed below:

Application No. _____

Filing Date _____

COPY

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by 35 U.S.C. § 112, first paragraph, I acknowledge the duty to disclose material information as defined in 37 CFR § 1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(U.S. Application Serial No.) _____

(U.S. Filing Date) _____

(Status--patented, pending, abandoned) _____

(U.S. Application Serial No.) _____

(U.S. Filing Date) _____

(Status--patented, pending, abandoned) _____

I hereby appoint the following registered practitioners Rudolf E. Hutz, Reg. No. 22,397; John D. Fairchild, Reg. No. 19,756; Harold Pezzner, Reg. No. 22,112; Richard M. Beck, Reg. No. 22,580; Paul E. Crawford, Reg. No. 24,397; Burton A. Amernick, Reg. No. 24,852; Morris Liss, Reg. No. 24,510; George R. Pettit, Reg. No. 27,369; Patricia Smink Rogowski, Reg. No. 33,791; Robert G. McMorrow, Jr., Reg. No. 30,962; Ashley I. Pezzner, Reg. No. 35,646; William E. McShane, Reg. No. 32,707; Mary W. Bourke, Reg. No. 30,982; Gerard M. O'Rourke, Reg. No. 39,794; James M. Olsen, Reg. No. 40,408; Francis DiGiovanni, Reg. No. 37,310; Eric J. Evain, Reg. No. 42,517; William E. Curry, Reg. No. 43,572; David W. Ward, Reg. No. 45,198; Daniel C. Mulveny, Reg. No. 45,897; John A. Evans, (Agent) 44,100; and Elliot C. Mendelson (Agent), Reg. No. 42,878, with full power of substitution and revocation, to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith.

Send Correspondence and Direct Telephone Calls to:

Morris Liss
(202) 331-7111

Morris Liss
Connolly Bove Lodge & Hutz LLP
P.O. Box 19088
Washington, D.C. 20036-3425 U.S.A.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Full name of sole or first inventor: Long YU

Inventor's Signature [Signature]

Residence Address Normanby Road, Clayton, Victoria, 3169, Australia

Citizenship Australia

Post Office Address P.O. Box 216 Hawthorn Victoria 3122 Australia

☐ See next page for additional inventors

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DECLARATION FOR PATENT APPLICATION

Page Two

Full name of second joint inventor (if any): Stephen COOMBS

Inventor's Signature *Stephen Coombs* Date 12 May 2001

Residence Address University of Queensland, Brisbane, Queensland 4072 Australia

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Full name of third joint inventor (if any): Gregor Bruce Yeo CHRISTIE

Inventor's Signature *Gregor Christie* Date 5 May 01

Residence Address 52 McGregor Street Middle Park Victoria 3026 Australia

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Full name of fourth joint inventor (if any): _____

Inventor's Signature _____ Date _____

Residence Address _____

Citizenship _____

Post Office Address _____

Full name of fifth joint inventor (if any): _____

Inventor's Signature _____ Date _____

Residence Address _____

Citizenship _____

Post Office Address _____

Full name of sixth joint inventor (if any): _____

Inventor's Signature _____ Date _____

Residence Address _____

Citizenship _____

Post Office Address _____

Full name of seventh joint inventor (if any): _____

Inventor's Signature _____ Date _____

Residence Address _____

Citizenship _____

Post Office Address _____

Full name of eighth joint inventor (if any): _____

Inventor's Signature _____ Date _____

Residence Address _____

Citizenship _____

Post Office Address _____

Full name of ninth joint inventor (if any): _____

Inventor's Signature _____ Date _____

Residence Address _____

Citizenship _____

Post Office Address _____

COPY

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I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

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					AUSTRALIA	(Country)	14/12/98	(Day/Month/Year Filed)	Yes No
					AUSTRALIA	(Country)	14/12/98	(Day/Month/Year Filed)	<input type="checkbox"/> <input type="checkbox"/>
					AUSTRALIA	(Country)	27/07/99	(Day/Month/Year Filed)	Yes No
						(Country)		(Day/Month/Year Filed)	<input type="checkbox"/> <input type="checkbox"/>
						(Country)		(Day/Month/Year Filed)	Yes No

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Application No.

Filing Date

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Full name of sole or first inventor: Long YU
Inventor's Signature: [Signature] Date: 23 May 2001
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Citizenship: Australia
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DECLARATION FOR PATENT APPLICATION

Page Two

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Full name of third joint inventor (if any): Gregor Bruce Yeo CHRISTIE
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Citizenship Australia
Post Office Address P O Box 218 Hawthorn Victoria 3122 Australia

Full name of fourth joint inventor (if any): _____
Inventor's Signature _____ Date _____
Residence Address _____
Citizenship _____
Post Office Address _____

Full name of fifth joint inventor (if any): _____
Inventor's Signature _____ Date _____
Residence Address _____
Citizenship _____
Post Office Address _____

Full name of sixth joint inventor (if any): _____
Inventor's Signature _____ Date _____
Residence Address _____
Citizenship _____
Post Office Address _____

Full name of seventh joint inventor (if any): _____
Inventor's Signature _____ Date _____
Residence Address _____
Citizenship _____
Post Office Address _____

Full name of eighth joint inventor (if any): _____
Inventor's Signature _____ Date _____
Residence Address _____
Citizenship _____
Post Office Address _____

Full name of ninth joint inventor (if any): _____
Inventor's Signature _____ Date _____
Residence Address _____
Citizenship _____
Post Office Address _____